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The key elements of Total Quality Management within the context of Indian business environment.

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Abstract- *Total Quality Management (TQM) has been considered as one of the most influential management innovations of the 20th century. TQM ensures an organization to meet its mission and ultimate objective of long-term survival. The purpose of this paper is to study the history of Total Quality Management (TQM) and find out the elements that are within this Indian business improvement. By using these key elements I will try to find out that how TQM is used within the current Indian business environment and how its elements affect different levels of an organisation.*

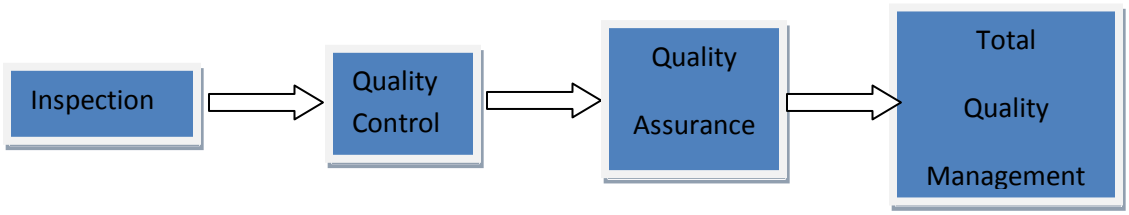
Keywords- *TQM, Critical key elements of TQM, Indian Business environment, organisation. Performance measures*

"I. INTRODUCTION",

Total quality management (TQM) is a management philosophy aimed at improving the quality of products and processes continuously to achieve customer satisfaction [1]. In recent era of globalization, Quality has been treated as a major competing weapon in both the manufacturing and service sectors with a prime concern to gain the market share, improve productivity and profitability. The strategic importance of good quality practices was well accepted by most Quality Management (QM) research, which ultimately results in improved performance and services that can serve as cutting-edge source of competitive advantage. For any firm, recognition of QM holds the key to competitiveness in the global market. In past, many studies have already been undertaken on how to implement and manage several quality practices in organisations, and its relative association with business performance.

"II. ABOUT TOTAL QUALITY MANAGEMENT",

Concepts developed by Americans Feigenbaum, Juran and Deming in Japan beginning in the late 1940's and 1950's, set the foundations of TQM. The evolution stages of TQM are Quality Control, Quality Assurance and now Total Quality Management.



"Figure 1. Evolution of TQM"

2.1 INSPECTION

The industrial revolution introduced mass production techniques to the workplace. By the end of the19th century, production processes were becoming more complex and it was beyond the capabilities of a single individual to be responsible for all aspects of production. It is impossible to inspect quality into a product in the sense that a faulty product cannot be put right by means of inspection alone. Statistical quality control can and does provide the environment within which the product is manufactured correctly the first time. A process called acceptance sampling improves the average quality of the items accepted by rejecting those items which are of unacceptable quality. In the 1920s, mass production brought with it the production line and assembly line concepts. Henry Ford revolutionized car production with the introduction of the mass production of the 'Model T' [2].
Mass production resulted in greater output and lower prices, but the quality of manufactured output became more variable and less reliable. There was a need to tackle the problem of the production of goods and parts of a fixed quality and standard.

The solution was seen to be in the establishment of inspection routines, under the supervision of a Quality Inspector. The first inspection procedures required the testing of the entire production - a costly, time consuming and inefficient form of sorting out good and defective items.

2.2 QUALITY CONTROL

The Second World War brought with it the need for defect-free products. Inspection departments now came to control the production process, and this resulted in the conformance to set specifications (the reduction of variability and the elimination of defects) being monitored and controlled throughout production. Quality Control departments were separate from, and independent of, the manufacturing departments.

2.3 QUALITY ASSURANCE

In turn, Quality Control evolved into Quality Assurance. The function of Quality Assurance is to focus on assuring process and product quality through operational audits, the supplying of training, the carrying out of technical analysis, and the giving of advice on quality improvement. The role of Quality Assurance is to consult with the departments (design and production for example) where responsibility for quality actually rests.

2.4 TOTAL QUALITY MANAGEMENT

Quality Assurance has given way to Company Wide Quality Management or Total Quality Management. As the names imply, quality is not longer seen to be the responsibility of a single department, but has become the responsibility and concern of each individual within an organisation. A small executive group sets the policy which results in targets for the various sections within the company. For example, line management sets 'do-able' objectives; engineers to design attractive, reliable, and functional products; operators to produce defect-free products and staff in contact with customers to be prompt and attentive. Total Quality Management aims to measure, detect, reduce, eliminate, and prevent quality lapses; it should include not only products but also services, and address issues like poor standards of service and late deliveries

"III. THE CORE ELEMENTS OF TQM",

Most excellence models trace their roots back to TQM, as TQM is the foundation of setting an organization up for managing its output at every level to achieve standards.

The core elements of TQM are

3.1 SYSTEMS AND TECHNIQUES

Quality awards and excellence models that are used to present the essential controls and discipline, in the development of quality management systems.

Identification of the particular tools and techniques for each different stage is required. This includes the area/project and the conditions in which the tools should be used to achieve successful application. The tools used should be familiar to employees and be classified as core or optional depending on their nature and impact each has on the working environment.

If a formal system for quality management isn't in place within the organisation one should be considered, the BS EN ISO 9001 (2000) is a good starting point for all companies as it outlines the major requirements.

Some of the systems they could use are the ISO 9000 series, EFQM Model, Investors in People and Charter Marks. Integration of the most relevant of professional systems shouldn't conflict with priorities and policies. Some of these systems and standards may be required as part of contractual agreements or legislative requirements.

In Assessing Business excellence [3], they outline that self-assessment results when set against an excellence framework provide organisations with insights to what their strengths and weaknesses are.

Developing a balanced Scorecard may prove very instrumental in developing further strategies for quality assurement. The Balanced Scorecard is a communication, informing and learning system which is used to help concatenate and to communicate strategy by aligning individual, organisational, business unit and cross-functional objectives to achieve

common goals and mission. An effective scorecard analysis and deployment is a link that connects plans to the organisations key value-adding and support processes.

3.2 PROCESSES MANAGEMENT (PM)

There should be strong emphasis on the manufacturing processes that impact upon the quality of products. The processes must be documented as per the requirements of ISO 9000. A poor quality manufacturing process will result in more rework and scrap. A periodic review of all aspects of manufacturing operations is to be done, and remedial actions to the defective processes are to be taken for effective quality management. To get rid of the production of defective products, there must be systems in place and these should be improved continuously. The key processes are to be identified and improved continuously to achieve better quality of products and processes.

3.3 MANAGEMENT LEADERSHIP (ML)

The role of the TML team is regarded as being important. The top management ensures that sufficient resources are available for quality-related activities. The top management itself must have clarity of quality goals. It is the top management that will have to demonstrate that it is fully committed to quality. The management takes a long-term strategic view of quality and not only in production targets. Sometimes TQM fails due to there being a gap between the top management's rhetoric about their intentions to TQM and the reality of implementation in various subunits of the organizations [4].

3.4 INVOLVEMENT OF PEOPLE

Leadership involves more than giving orders, but includes the involvement of people throughout the organization in achieving the organization's goals, using their talents to further the organization's purpose.

3.5 TEAMWORK

Within an organisation it is important to emphasize the need of teamwork. TQM is an all in initiative, which requires everyone to work individually and as a team. This can be within the one department of a company or interdepartmental. Teams in a kaizen environment could develop the culture of total quality through building collective responsibility and develop a sense of ownership, provide additional communication channels between individuals, management, customers and suppliers, develop problem solving skills and facilitate awareness of quality improvement potential, leading to behavioral and attitude change [5].

An initiative that works well within team working is quality circles. Within quality circles problems will only be solved if the team has developed effective relationships. They would tend to operate by consensus as the members work together to improve quality and quality control techniques.

3.6 CULTURE

Many researchers [6] have noted that TQM results in a radical change in the culture and the way of work in an organization. A fundamental factor is leadership, including philosophy, style, and behavior. To make TQM an organisation wide initiative, it has to be rooted in the culture of the company. It needs to be aligned with human resource systems, including job design, selection processes, compensation and rewards, performance appraisal, and training and development. The culture requires quality in all aspects of the company's operations, with processes being done right the first time and defects and waste eradicated from operations.

"Firms with strong comprehensive culture implement highly the TQM elements of top management leadership, people, process, and customer and supplier management. Firms with clan-driven culture implement highly the element of process management while firms with hierarchy-driven and weak comprehensive culture implement lowly to moderately all elements. A culture-based TQM implementation strategy is proposed." [7].

3.7 THE EMERGING BUSINESS WORLD

Within the emerging business world there are several elements that have become the norm now that may not have been a concern to organisations before. With the internet and consumers more willing to voice their opinion there are new elements

to consider and implement TQM into. There has been an explosion in the consumer service industry, time has become more compressed with everything now seemingly available at the touch of your fingertips through the internet, companies are becoming more global orientated therefore less local and companies are integrating all these elements into their organisational structures.

3.8 CONSUMER SERVICE EXPLOSION

Within a company at any level an employee may have to deal with a consumer/customer, that is why TQM is important so that the employee is correctly tooled to deal with any situation.

As outlined in a case study of Vista Optics Limited listening to customers can provide a basis on where to go in business and what improvements can be made,

"To be honest we thought we did! It is only after a concerted effort in this area, driven again by the desire for excellence that we really began to listen to the "real voice" of the customer. As a result, we have brought out new products, discovered new customers, forged partnerships with some customers and know a lot more about their real needs - 99.2% of all orders received by 4.00pm are now shipped the same day, an improvement from ca.90% in 1997, whilst substantially reducing stock levels during the same period." [8].

Feedback is an important element of catering to consumers, external indicators relate to consumer perceptions and product/service enhancement. Consumer surveys, external benchmarking and market reports are tools that can be used in assessments against future plans and/or roadmaps.

3.9 TIME COMPRESSION

"Supply chains compete, not companies" [9].

With the continual improvement in information technology access to information and requests made by consumers is happening at a faster rate than before. This is where if TQM is implemented at the core of an organisation and everyone is trained in maintaining and controlling quality of their work, when aiming to increase productivity total quality should be maintained.

"It is clearly recognized that the components included in the purchasing tools dimension of TBST. (Time-based strategies and tactics) are closely associated with the broader family of tools, philosophies, and initiatives called total quality management (TQM) or continuous quality improvement (CQI)."[10].

When using JIT production everything relies on timing and reducing waste. Just-in-time is having the right part at the right place in the right amount at the right time. This technique shortens cycle times, decreases the amount of inventory that a company carries, leads to low work-in-process (WIP), and creates a flexible atmosphere for the type or amount of product that a company would like to run and most of all streamlines work flow through a manufacturing facility.

3.10 GLOBALIZATION

Globalization leads to many companies, especially in the manufacturing industry in the 1980's, to fall victim to the improved quality standards being exported by the Japanese. Being the initiators of the TQM system, the Japanese had the lead on the competition in improving their quality processes and systems. Globalization brings risks due to which they are unlikely to survive in their present form without improving quality, competitiveness and management practices.

"With increasing globalization and global competition, quality management is becoming increasingly important to the leadership and management of all enterprises and organizations. Quality Management Principles provide understanding of and guidance on the application of quality management" [11].

Benchmarking is a tool that could be used very effectively if an organisation finds itself under pressure from other organisations within a global market. Benchmarking is a means of establishing, quantifying and comparing one activity's performance against another. Within a very competitive market benchmarking may be very hard, functional/generic benchmarking would be a good option as they would be able to take the lessons learned in other 'best-in-class' organisations specific processes, in different industries.

3.11 ORGANISATIONAL INTEGRATION

Integration has been defined by some researchers as the quality of the state of collaboration among departments to achieve unity of effort demanded by the environment (Lawrence and Lorsch 1967, Galbraith 1994). In current organisations integration between departments isn't an "if it happens" situation it is a certainty. For total quality to be effectively initiated at its core, project teams would be made up from production staff all the way to the accounting staff. This is to ensure that all areas are covered when planning and setting conditions in work.

An important element of making integration work within an organisation is that measurement and feedback channels are clear and concise.

"Measurement, from a baseline, needs to be made continually against a series of key result indicators – internal and external – in order to provide encouragement that things are getting better (i.e. fact rather than opinion)." [12].

3.12 TRAINING

TQM focuses on appropriate training and education of employees to improve their knowledge and skills. It includes general training as well as specific training and retraining of the employees. It provides a base for communication of new Organizational strategies to the employees.

Training helps in creating quality attitudes, loyalty toward organization and co-operation among them, which in turn helps in development of the organizations. TQM training builds human capital and provides employees with a foundation that prepares them to participate in a more decentralized organization [13].

3.13 CUSTOMERS FOCUS

Customer satisfaction is found to be an important measure of quality. So implementation of TQM requires that great emphasis must be given on CF, thus achieving high customer satisfaction. This requires that there must be proper systems to receive and deal with customers' complaints [14]. The organization needs to systematically capture customer requirements and ensure satisfaction levels after sales.

3.14 ROLE OF QUALITY DEPARTMENT

Quality planning is also an important CSF of TQM. It includes formulation of vision/mission statements, quality policy, and use of quality control and other management tools, etc. [15].

The organizations expect improvements in the quality of products that are produced, reductions in quality costs, defective and wastage rates as well as improvements in perceived product quality [16]. So appropriate systems of quality planning would improve the product quality and therefore enhance customer satisfaction.

3.15 PRODUCT DESIGN

Product Design (PD) is an important dimension of quality management; good or bad PD will directly impact on product success. Sound PD meets the requirements and expectations of customers. To improve PD design, engineers should have some shop floor and marketing experience [17].

Implementation of Product Design is very important as it is more or less relevant to all aspect of TQM & it reflect directly with consumer satisfaction.

"IV. CONCLUSION",

Considering the current environment and markets position many companies are growing because of the information era or are being incorporated into already established global organisations, for example EA Inc. in October 2007 acquired BioWare (Austin, Texas) and Pandemic Studios (Brisbane, Australia) to be incorporated into its global operations.
Total Quality Management is a mindset that needs to be established in an organisations core if it is to be successful. At every levels in all departments of a organization a mindset of quality management and continually improving should be primary, when expanding and developing as a whole organisation, new challenges would be dealt with in the most efficient way. But also it is required that at all levels tools and techniques should be clear to the users, goals and standards should be set out in

an attainable fashion and everything should be traceable through feedback to analyze what happened and how it could be improved. Quality within the organisations processes and employees should also be recognized and promoted as a distinguishing factor.

When growing and bringing in new businesses, if TQM is lead by the top executives of an organisation, it inspires e other members of the organisation to incorporate into their daily work and self training. It is always a part of the continuous improvement (Kaizen) mindset, continue to improve through daily actions and quality takes care of itself.

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